Appl. No. 09/910,594
Amdt. dated June 18, 2004
Reply to Office Action of January 20, 2004

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Amendments to the Specification:

Please replace the paragraph beginning on page 1, line 10 with the following amended paragraph:

On the occasion of rewritably recording information to an information recording medium with an information recording/reproducing apparatus, an information recording/reproducing apparatus records a user information ~~recording method~~ to an information recording medium and management information such as recording area of such user information to the particular place of the information recording medium, other than information that the user ~~want~~ wants to record. In response to a request from a host apparatus, a control apparatus for controlling the information recording apparatus makes access to a recording or a reproducing means at the necessary area of the information recording medium in order to record the user information to the information recording medium or reproduce the user information on the information recording medium. The ordinary information recording medium and recording/reproducing apparatus processes the information as the digital information and generally deals, as a unit, the data where the error correction code conforming to the predetermined regulation is added to the digital data of the predetermined amount. As an information recording/reproducing apparatus to process the rewritable information recording medium, there is proposed, for example, a DVD-RAM (Digital Versatile Disc – Random Access Memory) drive. In this apparatus, a DVD-RAM disc is used as the information recording medium. In the DVD-RAM disc, error correction is executed in the block of user data of 32 kB capacity and data management is also executed in unit of this block. When the DVD-RAM drive detects the defective block (data unit region in which recording is impossible because of a defect) at the recording area on the information recording medium during the recording operation, an alternative block is assigned and a defect management table used for management of correspondence between the defective block and alternative block is recorded on the medium. Moreover, it is sometimes executed that a defective block is registered to the defect management table even when the alternative block is not assigned. This defect management table is used, for example, as the Secondary Defect List (SDL) in the ISO/IEC (International Organization for Standard/ International Electro Technical Commission) 16824 Regulation. SDL is formed of one block and 3837 SDLs can be registered in maximum. In this regulation, SDL is written in four different locations on the medium in order to improve the reliability.

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Please delete the title on line 17 on page 4.

Please insert the title "BRIEF SUMMARY OF THE INVENTION" after line 1 on page 5.

Please replace the paragraph beginning on page 13, line 4 with the following amended paragraph:

Fig. 5 is the flowchart of the process to read the medium management information of the recording/ reproducing medium 3 and then setting this management information into the buffer memory 24 illustrated in Fig. 7. For example, when the recording/reproducing medium 3 is an exchangeable medium, such process is executed when the recording/reproducing medium 3 is loaded to the recording/reproducing apparatus 2. The control data zone of the reproduction-only area 31 is read (step 501) to check whether the valid flag 311 for the allowable number of times of recording is set or not (step 502). When the valid flag for the allowable number of times of recording is set, the valid flag 241 for the allowable number of times of recording and the allowable number of times of recording 242 are set in the buffer memory 24 (step 503). If the valid flag 311 for the allowable number of times of recording is not set, the valid flag 241 for the allowable number of times of recording in the buffer memory 24 is cleared (step 504). Thereafter, the defect management table 32 in the internal circumference is read (step 505) and the defect management table 32 at the external circumference is read (step 506) and the SDL update count 243 and SDL valid point information 244 in the buffer memory 24 are set (step 507). Here, the SDL valid point information may be set in the form of flag or in the form of number. Moreover, in this embodiment, it is assumed that the information about the allowable number of times of recording is stored in the reproduction-only area, but the present invention is not limited thereto and such information may be stored in the writable area.

Please replace the paragraph beginning on page 16, line 19 with the following amended paragraph:

In Fig. 2, the recording/reproducing apparatus 2 receives the WRITE command from the host apparatus 1 (step 201) and then executes the write process (step 202) and then checks whether this process has been executed normally or not (step 203). When the process is completely completed normally, this process is completed and if an error occurs, the alternative block assignment process is executed. First, whether there is a vacant alternative block or not is checked (step 204). If there is no vacant block, the process goes to the step 211 and the process is completed with generation

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of the error end information. When there is a vacant alternative block, the valid flag 241 for the allowable number of times of recording is checked (step 205). When the valid flag 241 for the allowable number of times of recording is cleared, the process goes to the step 207. When the valid flag 241 is set, the SDL update count 243 is compared with the allowable number of times of recording 242 (step 206). When the SDL update count 243 is the allowable number of times of recording 242 or larger, the process goes to the step 211 and the process is completed with generation of the error end information. When the SDL update count 243 is under the allowable number of times of recording 242, the alternative block write process is executed (step 207) and whether the alternative block write process is completed normally or not is checked (step 208). When an error occurs, the process goes to the step 211 and the process is completed with generation of the error end information. When the process is completed normally, one (1) is added to the SDL update count and the SDL is updated in the four points in the defect management table 32 at the internal and external circumferences (step 209) and checks whether the SDL update count has been completed normally or not (step 210). When the process is completed normally, the process is completed but if an error occurs, the process is completed with generation of the error end information (step 211). For the determination whether the SDL update has been completed normally or not, it is considered enough when the SDL is updated normally at the points N $(1 \leqq N \leqq 4)$ points or more.

Please replace paragraph beginning on page 18, line 21 with the following amended paragraph:

In Fig. 3, the recording/reproducing apparatus 2 receives the WRITE command from the host apparatus (step 301) and then checks the valid flag 241 for allowable number of times of recording (step 302). When the valid flag 241 for allowable number of times of recording is cleared, the process goes to the step 305. When the valid flag 241 is set, the SDL update count 243 is compared with the allowable number of times of recording 242 (step 303). When the SDL update count 243 is under the allowable number of times of recording 242, the process goes to the step 305 to execute the write process. When the SDL update count 243 is the allowable number of times of recording 242 or larger, the SDL valid point information 244 is checked (step 304). When the SDL valid point number is under 3, the process goes to the step 315 and the process is completed with generation of the error end information. When the SDL valid point number is 3 or larger, the write process is executed (step 305). After the write process, whether the write process has been completed normally or not is checked (step 306). When the write process is completed normally, the process is completed. If an error occurs, the alternative block assignment process is executed. First, whether there is a vacant alternative block or not is checked (step 307). If there is no vacant block, the process goes to the step 315 and the process is completed with

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generation of the error end information. When there is a vacant alternative block, the alternative block write process is executed (step 308) and whether the alternative block write process is completed normally or not is checked (step 309). If an error occurs, the process shifts to the step 315 and the process is completed with generation of the error end information. When the alternative block write process is completed normally, one (1) is added to the SDL update count, the SDL is updated at four points in the defect management table at the internal and external circumferences, the SDL valid point information 244 is updated based on the result of update (step 310) and whether the SDL update is completed normally or not is checked (step 311). If an error occurs, the process is completed with generation of the error end information (step 315). When update is completed normally, the valid flag 241 for allowable number of times of recording is checked (step 312). When the valid flag 241 for allowable number of times of recording is cleared, the process is completed and when the valid flag 241 is set, the SDL update count 243 is compared with the allowable number of times of recording 242 (step 313). When the SDL update count 243 is the allowable number of times of recording 242 or less, the process is completed. When the SDL update count 243 is larger than the allowable number of times of recording 242, the SDL valid point information 242 is checked (step 314). When the SDL valid point information is 3 or larger, the process is completed and when the SDL valid point information is under 3, the process goes to the step 315 and the process is completed with generation of the error end information. For the determination whether the SDL update has been completed normally or not in the step 311, the update is considered normal when the update is completed normally at the N ($1 \leq N \leq 3$) points or more. In the steps 304 and 314, the SDL valid point number is determined at the three points or more, but such determination may be executed at the four points or more. When the SDL valid point number is defined as M, it is enough when the relationship of $M > N$ is maintained. This determination is based on the concept that when a plurality of SDLs are held, such SDLs cannot be read simultaneously and possibility for disabled access to the medium can be reduced sufficiently.